Paper No. 13

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ROXY NI FAN

Appeal No. 1999-2505
Application No. 08/886,635

ON BRIEF

Before GARRIS, OWENS, and TIMM, *Administrative Patent Judges*.

TIMM, *Administrative Patent Judge*.

DECISION ON APPEAL

Applicant appeals the decision of the Primary Examiner finally rejecting claims 11-19, which are all of the claims pending in this application. We have jurisdiction under 35 U.S.C. § 134.

THE INVENTION

According to Appellant, the invention relates to a process for making a flexographic printing plate from a photosensitive printing element, particularly a flexographic element having an infrared radiation ablatable layer capable of being selectively removed by a laser beam (specification at 1, ll. 10-14). Claim 11, the only independent claim, is illustrative:

11. A process for making a flexographic photopolymer printing plate comprising, in order:

(1) providing a photosensitive element comprising:

(a) a support;

(b) at least one layer of a photopolymerizable material on the support, the photopolymerizable material comprising at least one elastomeric binder, at least one monomer, at least one initiator having sensitivity to non-infrared actinic radiation, and optionally at least one plasticizer, wherein at least one of the monomer and the optional plasticizer is a low molecular weight material having a weight average molecular weight of 30,000 or less; and

(c) at least one infrared ablation layer which is ablatable by infrared radiation and opaque to non-infrared actinic radiation, said infrared ablation layer being in direct contact with the at least one layer of photopolymerizable material (b) and having a surface opposite the photopolymerizable layer (b) capable of being exposed to laser ablation, the infrared ablation layer comprising:

(i) at least one infrared absorbing material;

(ii) a radiation opaque material, wherein (i) and (ii) can be the same or different; and

(iii) at least one binder which is substantially incompatible with at least one of the low molecular weight materials of layer (b), wherein the infrared ablation layer is tackfree or substantially tack-free when on the photopolymerizable layer; and optionally,

(d) a coversheet;

(2) removing the coversheet when present;

(3) imagewise ablating layer (c) with infrared laser radiation to form a mask;

(4) overall exposing the photosensitive element to actinic radiation through the mask; and

(5) treating the product of step (4) with at least one developer solution to remove (I) the infrared ablation layer which was not removed during step (3), and (II) the areas of the photopolymerizable layer (b) which were not exposed to non-infrared actinic radiation.

THE EVIDENCE

As evidence of unpatentability, the Examiner relies upon the following prior art references:

Fan	5,262,275	Nov. 16, 1993
Fan et al.	WO 94/03839	Feb. 17, 1994
(International Application published under the PCT)		

THE REJECTIONS

Claims 11-15 and 17-19 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Fan or, in the alternative, under 35 U.S.C. § 103 as obvious over Fan. Claim 16 stands rejected under 35 U.S.C. § 103 as obvious over Fan in view of Fan et al. We reverse. Our reasons are

analogous to those discussed in our Decision of January 30, 2001 rendered in Serial Number 08/432,450, the parent application. A further explanation follows.

OPINION

Claim 11 is directed to a process of providing a particular photosensitive element, imagewise ablating that element to form a mask, exposing the masked element to radiation, and treating the irradiated element with developer. Fan generally teaches these steps. However, as we found in the parent appeal (Decision at 5-9), Fan does not teach the details of the photosensitive element which is used in the process.

In particular, claim 11 requires that the photosensitive element contain an infrared ablation layer which is in direct contact with at least one layer of photopolymerizable material of (b). In contrast, Fan describes positioning a barrier layer between the photopolymerizable layer and infrared-sensitive material (Fan at col. 2, ll. 22-26; col. 4, ll. 11-13; claim 1(c)).

With regard to this difference, the Examiner finds that Fan teaches in column 4, lines 22-23 that a barrier layer can be dispensed with if incompatibility exists between monomer and IR layer and that, although Fan also indicates that the barrier layer shields the photopolymerizable layer from oxygen during exposure, Fan discloses that the effect of oxygen can be overcome by longer exposure or higher intensity (Answer at 4).

The Examiner's findings are erroneous. The disclosure at column 4, lines 22-23 does not, contrary to the finding of the Examiner, state that the barrier layer can be eliminated. Fan

discloses merely that "[i]f there is no compatibility between the two layers there will be no migration." Nor does Fan suggest overcoming the effect of oxygen exposure by using longer exposure or higher intensity. What Fan discloses is that "[t]he polymerization reactions require longer exposure times or higher intensity radiation sources, and the results are less reproducible when oxygen is present." (Fan at col. 4, ll. 27-29).

As we said in our Decision in the parent application:

> Throughout Fan, the photosensitive element is characterized as including a barrier layer. See col. 2, lines 13-31; col. 2, lines 55-58; col. 4, lines 11-13, the examples, and claim 1. Fan never describes the barrier layer as optional. Furthermore, according to Fan, the barrier layer serves two important functions. It minimizes the migration of materials between the photopolymerizable layer and the infrared sensitive layer and it shields the photopolymerizable layer from atmospheric oxygen (col. 4, lines 13-25).
>
> Coming to the conclusion that Fan teaches or suggests eliminating the barrier layer requires bridging several gaps in the path to the conclusion. Bridging those gaps requires knowledge of Appellant's solution. For instance, the Examiner states that the description in col. 4, lines 22-23 that "[i]f there is no compatibility between the two layers there will be no migration" amounts to a teaching that a barrier layer can be dispensed with if incompatibility exists between the monomer and infrared layer (Answer, page 7). While the statement linking compatibility between the layers and migration might lead one of ordinary skill in the art down the path of investigation, it does not directly teach how to obtain the desired incompatibility or indicate that the desired incompatibility would be obtained if only the binder, an optional material in the infrared sensitive layer of Fan, were selected to be incompatible with the monomer in the photopolymerizable layer. The general disclosure must do more than lead one of ordinary skill in the art down the path of investigation, it must contain a sufficient teaching of how to obtain the desired result or must indicate that the claimed result would be obtained if certain directions were pursued. *See The Gillette Co. v. S.C. Johnson & Son Inc.*, 919 F.2d 720, 725, 16 USPQ2d 1923, 1928 (Fed. Cir. 1990) (quoting *In re Eli Lilly & Co.*, 902 F.2d 943, 945, 14 USPQ2d 1741, 1743 (Fed. Cir. 1990)).

> Furthermore, even if it were obvious to do all the picking and choosing necessary to result in a photopolymerizable barrier layer containing a monomer and an infrared sensitive layer with incompatible binder, there would still be the problem of shielding the photopolymerizable layer from atmospheric oxygen. The Examiner indicates that Fan discloses that the effect of atmospheric oxygen can be overcome by longer radiation exposure times or higher intensity radiation sources. However, Fan also indicates that the results are less reproducible when oxygen is present. One would not desire to form a less reproducible printing plate when a barrier layer can be used which remedies that problem and other problems too. The fact remains that Fan expressly requires a barrier layer in every embodiment of the photosensitive element, there is no suggestion in Fan for eliminating the barrier layer, and Fan teaches away from such elimination.

The above holds true in the present case as well.

The Examiner states that "[t]o the extent the articles disclosed or suggested in Fan do not clearly anticipate the claimed articles, it is submitted that any differences, if any, are so minor as to be prima facie obvious." (Answer at 4). The "difference" as found by the Examiner is the requirement of a barrier layer in the photopolymerizable element of Fan. In light of the fact that Fan teaches away from eliminating the barrier layer, we cannot agree that this difference is so minor as to be *prima facie* obvious as put by the Examiner.

Fan et al. is used in combination with Fan to reject claim 16 as obvious. Fan et al. is applied by the Examiner for its teaching of performing the exposure step in a vacuum (Answer at 6). Fan et al. does not cure the deficiencies of the rejection over Fan: particularly, in view of the fact that Fan teaches using a photopolymerizable layer which is usually inherently tacky and prone to sticking to the vacuum frame (Fan at col. 4, ll. 29-36).

We conclude that the Examiner has failed to establish a *prima facie* case of obviousness with respect to the subject matter of claims 11-19.

CONCLUSION

To summarize, the decision of the Examiner to reject claims 11-19 under 35 U.S.C. § 103 is reversed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

REVERSED

BRADLEY R. GARRIS Administrative Patent Judge	)
TERRY J. OWENS Administrative Patent Judge	) BOARD OF PATENT) APPEALS) AND) INTERFERENCES
CATHERINE TIMM Administrative Patent Judge	)

CT/jg

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